



NRSW Utilities Program Manager (N44U)/PWC Utilities Business Line Manager (600)

Naval Base Coronado New Photovoltaic Systems



Topics

NRSW Utilities Program Manager (N44U)/PWC Utilities Business Line Manager (600)

- Naval Base Coronado Energy Profile
- New PV Projects in 2002
 - 30 KW
 - 750 KW
- Project Descriptions
- Project Economics
- Energy, Environmental & Other Benefits
- Obstacles to Photovoltaic Projects
- Lessons Learned



Naval Base Coronado Energy Profile

NRSW Utilities Program Manager (N44U)/PWC Utilities Business Line Manager (600)

- NAS North Island
 - 25+ Megawatt (mw) peak demand
 - Over 200,000,000 kwh per year
 - \$20 - \$25 million electric bill
- NAB Coronado
 - 5 mw peak demand
 - 25,000,000 kwh per year
 - \$4 million electric bill



New PV Projects: 30 KW System, Bldg 14, NAB

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New PV Projects: 750 KW System, NAS North Island

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PV Project Descriptions

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- 30 KW System, Building 14, NAB
 - 33.6 kw (nominal)/30.1 kw(ac) output
 - 49,765 kwh annual production
 - Prime contractor: Noresco/ERI Services
 - Subcontractor: PowerLight Corp.
 - Specifics:
 - 275 – 109.3 w PV modules
 - Manufacturer: Powerlight
 - Model PL - AP – 130
 - Completed April 2002



PV Project Descriptions

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- 750 KW System, NAS North Island
 - 924 kw stabilized power/750 kw(ac) output
 - 1,244,000 kwh annual production
 - Prime contractor: Noresco/ERI Services
 - Subcontractor: PowerLight Corp.
 - Specifics:
 - 3,078 - 300 w PV modules
 - Model ASE-300-DG/50
 - Covered parking structure for 400 spaces
 - Completed October 2002

Largest PV system in the Federal government



Project Economics: 750 KW System

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- Total Cost: \$7.7 million
 - Less SDREO Buydown (\$3.6 million)
 - Less DoD Supplemental (\$1.8 million)
- Net Cost to NRSW: \$2.3 million
- Annual Savings: \$228,300
- Simple Payback: 10 Years
- \$2.3 million net cost financed by combination of Navy Public Works Center buydown and ESPC financing



Energy, Environmental & Other Benefits

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- Provides 1,293,765 kwh per year of clean power
 - 3% of NASNI peak demand
 - 1% of NASNI power consumption
- Reduces air emissions
 - 309 tons of CO₂ per year
 - 486 lbs of NO_x
 - 54 lbs of SO_x
- Provides sources of on-base power
- Reduces vulnerability to disruptions to off-base power grid



Obstacles to Photovoltaic Projects

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- Economics
 - Long paybacks
 - Low return on investment
 - May be too low to justify financing
 - Difficult to compete with other energy projects
 - Requires too great a financial commitment
- Perceptions/Culture
 - Many bases not ready for projects
 - PV often perceived as not reliable, won't work
 - Users reluctant to make “paradigm shift”
- *Takes “2nd source” of funding to make PV economical*



Lessons Learned

NRSW Utilities Program Manager (N44U)/PWC Utilities Business Line Manager (600)

- Get buy-in from stakeholders up-front
 - Utilities/Maintenance Personnel
 - Comptrollers
 - Energy Managers
 - Chain of Command
- Involve all stakeholders in decision process
- Make reasoned decisions
 - Don't rush to do PV project because it is “neat thing to do”
 - Don't reject PV because it is different or new